IMPROVING AGILE SOFTWARE DEVELOPMENT :A CASE STUDY ON ADAPTIVE SYSTERM DEVELOPMENT

G. I .U .S .Perera

This thesis was submitted to the In partial fulfillment of the requirements for the Degree of Master of Science

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

January 2008

90106

Abstract

Software development is getting more and more complex with the improvement of technologies and tools for relative domains. Applying software solutions became an inevitable fact in the modern society. However, the domain conditions and the business environments change rapidly, by making the software norms obsolete. Furthermore, due to the intrinsic properties of software, situation becomes worse. Though the history confines to a few decades, software engineering owns dozens of software process paradigms to date. Introducing new process paradigms may resolve a selected problem, but not the others, and often introduces more issues. Moreover, it is evident that the improvements for the software processes only from the technical orientation do not solve all the issues in rapid changing environments.

Agile software process is a well known, lightweight, and flexible practice which was introduced as a remedy for the above crisis. In many aspects it serves its purpose. It introduced a paradigm shift to the software development for rapid delivery in uncertain environments. However, usage of well known Agile like software paradigms as it is in the practical conditions is arguable. The Agility concept endures certain flaws due to the native characteristics. Neither, it is the best software paradigm, nor the panacea for all software projects.

This research was derived with new perspectives from rational concepts in different domains, which were not yet been introduced to the Agile software process improvements. The research objectives were focused towards identifying existing bottlenecks in the Agile practices and potential improvements to those. Additionally, a case study was carried out in the mutual benefiting manner to the system's improvements and give flavor to the research with practical essence. The conducted study was successful in many aspects, and shows a significant impact to the Agile process. Furthermore, within the limited resource constraints the outcome of the study is really promising for the future study in the research area.